

the electric chronograph. The instant thus recorded, when expressed in Greenwich mean time, was

$$23^{\text{h}}\ 47^{\text{m}}\ 3^{\text{s}}\cdot8$$

which is practically identical with the time (predicted to the decimal of a minute) in the *Nautical Almanac*, viz.

$$23^{\text{h}}\ 47^{\text{m}}\cdot1$$

By watching the rate of progress of the indentation for some seconds the observer estimated that external geometrical contact took place 2 seconds earlier than the time registered. The Moon's motion was rapid.

Broken clouds soon supervened, and ultimately the sky became thickly overcast, the final contact being invisible.

Radcliffe Observatory, Oxford:
1905 November 6.

Observations of Comet d 1902 from Photographs taken with the 30-inch Reflector of the Thompson Equatorial at the Royal Observatory, Greenwich.

(Communicated by the Astronomer Royal.)

The following positions of Comet d 1902 are obtained from photographs with the 30-inch reflector. As a rule there were two images on each plate, and the exposures varied from 10^m to 20^m. The plates were measured in the Astrographic Micrometer. Four reference stars were taken in each case, situated as symmetrically as possible about the comet. The positions of the reference stars were derived from the Catalogues of the *Astronomische Gesellschaft*.

Date and G.M.T.				Apparent R.A.		Apparent Dec.	Log. Δ.	Corr. for Parallax.	
								R.A.	Dec.
1902.	h	m	s	h	m	s		s	"
Dec. 29	12	2	54	7	4	32·07	3 16 43·6	0·2917	−0·03 +3·3
30	12	36	32	7	3	49·67	3 32 55·3	0·2903	+ 0·01 +3·3
31	11	59	17	7	3	8·62	3 48 37·6	0·2889	− 0·02 +3·3
1903.									
Jan. 2	11	33	4	7	1	43·99	4 21 19·9	0·2866	− 0·04 +3·3
3	10	39	33	7	1	2·45	4 37 34·5	0·2855	− 0·07 +3·3
7	10	31	23	6	58	7·37	5 47 15·5	0·2818	− 0·07 +3·3
7	10	57	55	6	58	6·52	5 47 35·8	0·2818	− 0·05 +3·3
8	11	34	30	6	57	21·20	6 6 3·4	0·2809	− 0·01 +3·3
15	11	29	1	6	52	14·79	8 17 3·9	0·2779	+ 0·01 +3·2

Nov. 1905. *Comet d 1902 from Photographs.*

9

Date and G.M.T.				Apparent R.A.	Apparent Dec.	Log. Δ.	Corr. for Parallax.	
							R.A.	Dec.
1903.	h	m	s	h m s	° ' "		s	"
Jan. 15	11	47	49	6 52 14.30	8° 17' 19.4	0.2779	+ .03	+ 3.2
25	10	20	57	6 45 33.30	11 33 26.3	0.2797	— .01	+ 2.9
28	9	19	23	6 43 48.56	12 32 40.8	0.2816	— .05	+ 2.9
Feb. 1	10	27	10	6 41 40.07	13 53 34.1	0.2852	+ .03	+ 2.8
2	9	36	23	6 41 12.17	14 12 46.8	0.2901	— .01	+ 2.7
16	10	32	39	6 36 51.23	18 42 17.0	0.3110	+ .08	+ 2.4
17	9	38	2	6 36 44.11	18 59 49.9	0.3128	+ .04	+ 2.3
18	7	14	24	6 36 38.92	19 16 7.5	0.3147	— .07	+ 2.3
21	9	33	49	6 36 30.35	20 11 9.0	0.3205	+ .05	+ 2.2
23	8	10	18	6 36 33.03	20 44 51.0	0.3247	0.0	+ 2.1
25	7	19	46	6 36 42.09	21 18 15.7	0.3288	— .05	+ 2.1
26	7	21	7	6 36 49.06	21 35 0.3	0.3310	— .04	+ 2.1
28	7	50	58	6 37 8.33	22 8 16.1	0.3353	— .01	+ 2.0
Mar. 1	7	22	7	6 37 20.09	22 24 8.0	0.3374	— .03	+ 2.0
3	8	44	46	6 37 49.92	22 56 50.2	0.3419	+ .04	+ 1.9
4	7	50	16	6 38 6.33	23 11 50.8	0.3442	0.0	+ 1.9
6	7	14	32	6 38 44.82	23 42 7.2	0.3487	— .02	+ 1.8
6	7	34	14	6 38 45.00	23 42 19.0	0.3487	— .01	+ 1.8
11	7	37	56	6 40 50.79	24 55 40.7	0.3603	+ .01	+ 1.7
11	7	57	8	6 40 51.22	24 55 51.6	0.3603	+ .02	+ 1.7
12	8	12	56	6 41 21.40	25 10 5.9	0.3627	+ .04	+ 1.7
12	8	38	52	6 41 21.99	25 10 20.4	0.3627	+ .06	+ 1.7
13	7	24	39	6 41 51.91	25 23 30.7	0.3650	0.0	+ 1.7
13	7	47	20	6 41 52.38	25 23 44.7	0.3650	+ .02	+ 1.7
15	7	27	35	6 42 59.49	25 50 45.9	0.3698	+ .01	+ 1.6
16	9	12	37	6 43 38.19	26 5 2.5	0.3722	+ .09	+ 1.7
21	7	50	30	6 46 59.06	27 8 1.4	0.3840	+ .04	+ 1.5

Further details of the observations will be given in the Greenwich Volume for 1904.

Observations of the Satellite of Neptune from Photographs taken at the Royal Observatory, Greenwich, between 1904 November 11 and 1905 April 15.

(Communicated by the Astronomer Royal.)

The following measures of position-angle and distance of Neptune's satellite were made from photographs taken with the 26-inch refractor of the Thompson Equatorial. The occulting shutter was used, as in previous years. The photographs were taken by Messrs. Davidson, Edney, or Melotte, and were measured in a position micrometer in direct and reversed positions by Messrs. Edney and Burkett. The tabular positions with which comparison is made were computed from the data given in the *Connaissance des Temps*, based on Dr. Hermann Struve's elements; the eccentricity of the orbit being neglected.

A discussion of these residuals gives the following differences in the sense Tabular-Observed to Dr. Hermann Struve's elements.

$$du = -0^{\circ}.72. \quad dN = -0^{\circ}.89. \quad dI = -0^{\circ}.27. \quad da = +''086;$$

giving for the epoch 1905.1

$$a = 16''.185. \quad N = 188^{\circ}.26. \quad I = 117^{\circ}.14.$$

NEPTUNE AND SATELLITE.

Position-angle and Distance from Photographs taken with the 26-inch Refractor.

Date and G.M.T.					Position-angle.			Distance.		
1904.	d	h	m	s	Observed.	Tabular.	T-O.	Observed.	Tabular.	T-O.
Nov.	11	12	1	38	315.77	317.91	+2.14	12.47	12.82	+0.35
	11	12	37	34	315.66	316.23	+0.57	12.76	12.97	+ .21
	14	12	52	18	131.53	131.60	+0.07	13.20	13.43	+ .23
	14	13	25	32	128.86	130.18	+1.32	13.56	13.57	+ .01
	15	12	3	45	84.89	86.80	+1.91	16.20	16.68	+ .48
	22	11	45	23	20.87	23.73	+2.86	11.28	11.49	+ .21
	22	12	19	12	22.97	21.71	-1.26	11.46	11.41	- .05*
	22	13	3	38	19.37	19.00	-0.37	11.70	11.31	- .39
	22	13	33	54	15.77	17.13	+1.36	11.57	11.24	- .33
Dec.	5	12	14	20	288.13	289.97	+1.84	15.39	15.77	+ .38
	5	12	42	16	288.00	289.09	+1.09	15.48	15.85	+ .37
	5	13	7	49	288.02	288.28	+0.26	15.78	15.93	+ .15
	7	11	7	55	178.29	178.25	-0.04	10.80	11.06	+ .26
	20	10	33	31	98.63	99.49	+0.86	16.56	16.62	+ .06

* Neptune on edge of occulting shutter.